

50. hydroxide ions in said first base generation chamber and to cause cations in said cation source reservoir to electromigrate toward said first barrier and to be transported across said first barrier toward said cathode to combine with said transported cations to form cation hydroxide, and

(d) removing the cation hydroxide in an aqueous liquid stream as an effluent from said first base generation chamber.

51. The method of Claim 50 in which the volume of said cation source reservoir is at least about 5 times the volume of said first base generation chamber.

52. The method of Claim 50 in which said first base generation chamber is pressurized and the pressure maintained in said first base generation chamber is at least about 2 times any pressure maintained in said cation source reservoir.

53. The method of Claim 50 used to form a base eluent for an anion analysis system further comprising the steps of:

(e) flowing said cation hydroxide generated in step(d) and a liquid sample containing anions to be detected through a chromatographic separator in which anions to be detected are chromatographically separated, forming a chromatograph effluent, and

(f) flowing said chromatography effluent, with or without further treatment, past a detector in which the separated ions in said chromatography effluent are detected.

54. The method of Claim 50 in which a pressure of at least 500 psi is maintained in said first base generation chamber.

55. A method of generating an acid comprising the steps of:

(a) providing an anion source in an anion source reservoir,

(b) flowing an aqueous liquid stream through a first acid generation chamber separated from said anion source reservoir by a first barrier substantially preventing liquid flow while providing an anion transport bridge, said barrier being at least one mm thick,

(c) applying an electric potential between a cathode in electrical communication with said anion source reservoir and an anode in electrical communication with said first acid generation chamber to electrolytically generate hydronium ions in said first acid generation chamber and to cause anions in said anion source reservoir to electromigrate toward said first barrier and to be transported across said first barrier toward said anode to combine with said transported anions to form an acid, and

(d) removing the acid in an aqueous liquid stream as an effluent from said first acid generation chamber.

56. The method of Claim 55 in which the volume of said anion source reservoir is at least about 5 times the volume of said first acid generation chamber.

57. The method of Claim 55 in which said first acid generation chamber is pressurized and the pressure maintained in said first acid generation chamber is at least about 2 times any pressure maintained in said anion source reservoir.

58. The method of Claim 55 in which a pressure of at least 500 psi is maintained in said first acid generation chamber.

59. A method of generating a base comprising the steps of:

- (a) providing a cation source in a cation source reservoir,
- (b) pumping an aqueous liquid stream through a first base generation chamber using a pump with an outlet disposed upstream of a first base generation

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chamber which is separated from said cation source reservoir by a first barrier substantially preventing liquid flow while providing a cation transport bridge,

(c) applying an electric potential between an anode in electrical communication with said cation source reservoir and a cathode in electrical communication with said first base generation chamber to electrolytically generate hydroxide ions in said first base generation chamber and to cause cations in said cation source reservoir to electromigrate toward said first barrier and to be transported across said first barrier toward said cathode to combine with said transported cations to form cation hydroxide, and

(d) removing the cation hydroxide in an aqueous liquid stream as an effluent from said first base generation chamber.

60. The method of Claim 59 in which said first base generation chamber is pressurized by said pump and the pressure maintained in said first base generation chamber is at least about 2 times any pressure maintained in said cation source reservoir.

61. The method of Claim 59 used to form a base eluent for an anion analysis system further comprising the steps of:

(e) flowing said cation hydroxide generated in step(d) and a liquid sample containing anions to be detected through a chromatographic separator in which anions to be detected are chromatographically separated, forming a chromatograph effluent, and

(f) flowing said chromatography effluent, with or without further treatment, past a detector in which the separated ions in said chromatography effluent are detected.

62. The method of Claim 59 further comprising, prior to step (e) the following step:

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(g) pumping through a gradient pump one or more gradient eluents into said cation hydroxide eluent stream.

63. A method of generating an acid comprising the steps of:

(a) providing an anion source in an anion source reservoir,
(b) pumping an aqueous liquid stream through a first acid generation chamber using a pump with an outlet disposed upstream of a first acid generation chamber which is separated from said anion source reservoir by a first barrier substantially preventing liquid flow while providing an anion transport bridge,

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(c) applying an electric potential between a cathode in electrical communication with said anion source reservoir and an anode in electrical communication with said first acid generation chamber to electrolytically generate hydronium ions in said first acid generation chamber and to cause anions in said anion source reservoir to electromigrate toward said first barrier and to be transported across said first barrier toward said anode to combine with said transported anions to form an acid, and

(d) removing the acid in an aqueous liquid stream as an effluent from said first acid generation chamber.

64. The method of Claim 63 in which said first acid generation chamber is pressurized by said pump and the pressure maintained in said first acid generation chamber is at least about 2 times any pressure maintained in said anion source reservoir.

65. The method of Claim 63 used to form an acid eluent for an cation analysis system further comprising the steps of:

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(e) flowing said acid generated in step(d) and a liquid sample containing cations to be detected through a chromatographic separator in which cations to be detected are chromatographically separated, forming a chromatograph effluent, and